CLAIM AMENDMENTS:

Please amend the claims as follows:

1-15. (Cancelled).

16. (Currently amended) [[The]] A grinding machine ~~according to claim 6~~ for grinding a back surface of a semiconductor wafer whose front surface is provided with a groove with a pattern according to an outer contour of a desired semiconductor chip so as to divide the semiconductor wafer into separate pieces of semiconductor chips, the grinding machine comprising:

(a) a wafer holding mechanism for holding the semiconductor wafer;

(b) a grinder for grinding the back surface of the semiconductor wafer held by the wafer holding mechanism;

(c) a penetration detecting mechanism for detecting opening of a bottom face of the groove formed in the semiconductor wafer held by the wafer holding mechanism;

(d) a control section for determining timing for finishing the back surface grinding of the semiconductor wafer by the grinder based on a result of the detection by the penetration detecting mechanism, wherein:

the penetration detecting mechanism includes an air sucking mechanism for sucking air inside the groove formed in the semiconductor wafer held by the

wafer holding mechanism and an air pressure sensor for detecting air pressure inside the groove; and

wherein the control section determines the timing for finishing the back surface grinding of the semiconductor wafer by the grinder, based on an output detected by the air pressure sensor.

17. (Original) The grinding machine according to claim 16, wherein the control section detects a change in the air pressure inside the groove by monitoring outputs of the air pressure sensor during the back surface grinding of the semiconductor wafer by the grinder, and determines the timing for finishing the back surface grinding of the semiconductor wafer by the grinder to be at a time when a prescribed time elapses after the detection of the change in the air pressure.